

Highlights of the Collaboration with CEA

*Advanced Fuel Cycle Initiative
Semi-Annual Review Meeting
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Presented by:

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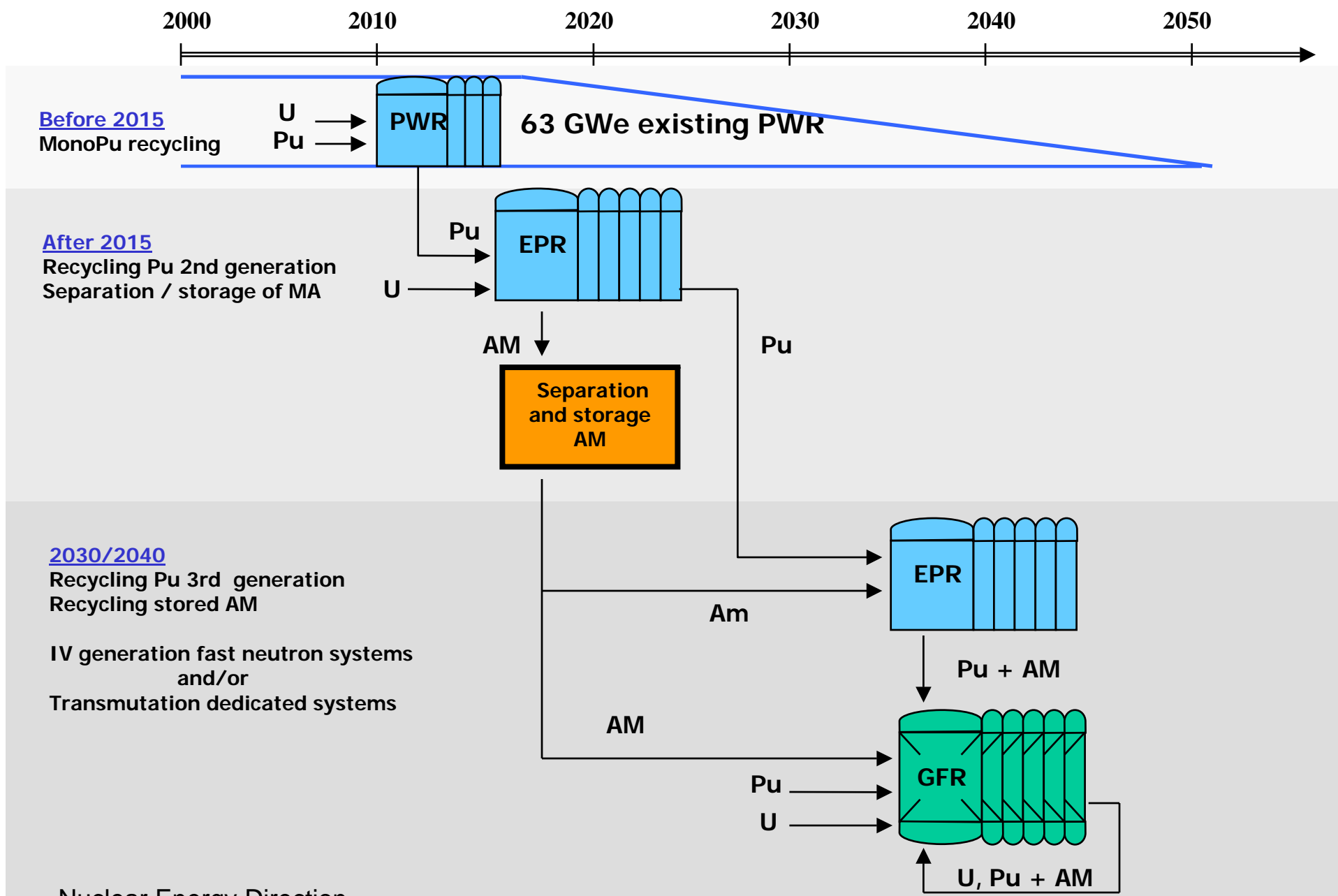


Overview

- **Current French and EU strategies**
- **Status of collaboration**
- **Review of major collaborations**
 - Separations
 - Systems
 - Physics

**Materials and Fuels have specific presentations.
Small action on accelerators.**

What scenarios for Pu and waste management in the future french park?



Current Evolutions in EU programs

- **EFTTRA: transmutation fuels in HFR**
- **6th PCRD is being prepared:**
 - **EUROPART**
 - **EUROTRANS: CEA- ENEA – FZK – SCK**
 - **TRADE**
 - **Technology (LBE)**
 - **Design of a demo ADS**
- **MYRRAH seems to have disappeared**

Work Package 7: Chemical Processing of Irradiated Nuclear Fuel

- **Technical coordinators:** J. Laidler (DOE), P. Baron (CEA)
- **Last coordination meeting:** July 8-10, 2003, Marcoule
- **Major activities:**
 - Exchange of data on composition of dissolver sludge and cladding hulls
 - Exchange of results from advanced aqueous separations process development tests, including pre-test predictions with the PAREX code (CEA) and the AMUSE code (DOE)
 - Exchange of observers at aqueous process demonstration tests (UREX, UREX+, SANEX-DIAMEX, PALIDEX)
 - Joint processability evaluation for candidate Gen IV fuel types

Work Package 7: Chemical Processing of Irradiated Nuclear Fuel (continued)

- **Major activities (continued)**
 - Exchange of observers at pyrochemical process experiments
 - Joint evaluation of process concepts for TRISO fuel treatment
 - Information exchange on future plant design
 - *Reduction of gas releases (Xe, Kr, ^{14}C , ^3H , I)*
 - *Process simplification for one-group separation of transuranics*
 - *Evaluation of advanced decladding processes*
- **Future plans**
 - CEA assignee at ANL to participate in pyroprocess development (6 months)
 - Short-term assignments of DOE personnel at Marcoule
 - Series of information exchange meetings in conjunction with the ATALANTE 2004 conference (June 2004, Nimes)

Work Package 6: Systems

- **Technical coordinators:** P. Finck (DOE), J-P Grouiller (CEA)
- **Last coordination meeting:** July 8-10, 2003, Cadarache
- **Major activities:**
 - Activities on Pu multirecycle in PWR's are being completed
 - Plan for joint activities on Am recycle in PWR's
 - Continue work on transmutation in GFR's
 - Joint benchmarking of systems codes
 - Exchange of information on HGTR deep burn (next meeting)
 - Scenario studies remain distinct
 - *But: exchange of information on repository impacts (next meeting)*
 - Exchange of information on cost/benefit analyses (next meeting)

Work Package 4: Physics

- **Technical coordinators:** P. Finck (DOE), G. Bignan (CEA) – R. Jacqmin (CEA)
- **Last coordination meeting:** July 30, 2003, Grambois
- **Major activities**
 - Codes: CEA is dropping SPARTE and adopting MCNP-X – will want to incorporate their models
 - Codes: full collaboration on ERANOS development and validation
 - Continue exchange and analyses of integral data
 - CEA is interested in participating in LANL XS measurements and evaluation
 - CEA requests DOE involvement in XS validation
 - MUSE and TRADE: ANL staff at CEA
 - CEA is planning a GFR configuration: ANL will support significant aspects of preparation and experimentation: ANL staff at CEA